1. (Amended) An Fe-Ni-Co alloy whose chemical composition comprises, by weight based on total weight:

$$32\% \le Ni \le 34\%$$

$$3.5\% \le \text{Co} \le 6.5\%$$

$$0\% \le Mn \le 0.1\%$$

$$0\% \le Si \le 0.1\%$$

$$0\% \leq Cr \leq 0.1\%$$

$$0.005\% \le C \le 0.02\%$$

$$S \le 0.001\%$$

$$0.0001\% \le Ca \le 0.002\%$$

$$0.0001\% \le Mg \le 0.002\%$$

and further comprising iron and impurities resulting from smelting; the chemical composition of the alloy furthermore satisfying the relationships:

$$Co + Ni \le 38.5\%$$

$$Co + 0.5 \times Ni \ge 20\%$$

Co +5 x Ni 
$$\geq$$
 165.5%

and

$$S \le 0.02 \text{ x Mn} + 0.08 \text{ x Ca} + 0.6 \text{ x Mg}$$

wherein said alloy has a martensitic transformation start point of less than -50°C, an average coefficient of thermal expansion between 20° and 100°C of less than or equal to 0.7 x  $10^{-6}$ /°K and a mean coefficient of thermal expansion between 80°C and 130° of less than or equal to 1 x  $10^{-6}$ /°K.

7. (Amended) A shadow mask, which comprises at least one foil having holes, said foil comprising an alloy whose chemical composition comprises, by weight based on total weight:

$$32\% \le Ni \le 34\%$$

$$3.5\% \le \text{Co} \le 6.5\%$$

$$0\% \le Mn \le 0.1\%$$

$$0\% \le Si \le 0.1\%$$

$$0\% \le Cr \le 0.1\%$$

$$0.005\% \le C \le 0.02\%$$

$$S \leq 0.001\%$$

$$0.0001\% \le Ca \le 0.002\%$$

$$0.0001\% \le Mg \le 0.002\%$$

and further comprising iron and impurities resulting from smelting; the chemical composition of the alloy further satisfying the relationships:

$$Co + Ni \le 38.5\%$$

$$Co + 0.5 \times Ni \ge 20\%$$

Co +5 x Ni 
$$\geq$$
 165.5%

and

$$S \le 0.02 \text{ x Mn} + 0.08 \text{ x Ca} + 0.6 \text{ x Mg}$$

wherein said alloy has a martensitic transformation start point of less than -50°C, an average coefficient of thermal expansion between 20° and 100°C of less than or equal to 0.7 x  $10^{-6}$ /°K and a mean coefficient of thermal expansion between 80°C and 130°C of less than or equal to 1 x  $10^{-6}$ /°K.

8. (Amended) A method of forming a shadow mask, comprising the steps of forming holes in a foil and drawing said hole-containing foil, wherein the foil comprises an alloy having a chemical composition which comprises, by weight based on total weight:

$$32\% \le Ni \le 34\%$$

$$3.5\% \le \text{Co} \le 6.5\%$$

$$0\% \leq Mn \leq 0.1\%$$

$$0\% \le Si \le 0.1\%$$

$$0\% \le Cr \le 0.1\%$$

$$0.005\% \le C \le 0.02\%$$

$$S \le 0.001\%$$

$$0.0001\% \le Ca \le 0.002\%$$

$$0.0001\% \le Mg \le 0.002\%$$

and further comprising iron and impurities resulting from smelting; the chemical composition of the alloy further satisfying the relationships:

$$Co + Ni \le 38.5\%$$

$$Co + 0.5 \times Ni \ge 20\%$$

$$Co + 5 \times Ni \ge 165.5\%$$

and

$$S \le 0.02 \text{ x Mn} + 0.08 \text{ x Ca} + 0.6 \text{ x Mg}$$

wherein said alloy has a martensitic transformation start point of less than -50°C, an average coefficient of thermal expansion between 20° and  $100^{\circ}$ C of less than or equal to 0.7 x  $10^{-6}$ /°K and a mean coefficient of thermal expansion between 80°C and 130°C of less than or equal to 1 x  $10^{-6}$ /°K.